

For Reference

NOT TO BE TAKEN FROM THIS ROOM

For Reference

NOT TO BE TAKEN FROM THIS ROOM

Ex LIBRIS
UNIVERSITATIS
ALBERTAENSIS





Digitized by the Internet Archive
in 2019 with funding from
University of Alberta Libraries

<https://archive.org/details/Brosseau1965>

721510
1965 (11)
11 11

THE UNIVERSITY OF ALBERTA

FACTORS INFLUENCING SECOND
LANGUAGE LEARNING

by

JOHN FRANCIS BROSSEAU

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE
OF MASTER OF EDUCATION

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

EDMONTON, ALBERTA

SEPTEMBER, 1965

UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Factors Influencing Second Language Learning" submitted by John Francis Brosseau in partial fulfilment of the requirements for the degree of Master of Education.

ACKNOWLEDGEMENTS

The writer wishes at this time to extend his thanks to his chairman, Dr. W.B. Dockrell, for his support and helpful suggestions. Further thanks are extended to Mrs. M. Monod and Dr. M. Gulutsan for their helpful suggestions and criticisms.

The writer is also indebted to Dr. J. Kelley for his help with the statistical design and the interpretation of the results.

Special thanks are due to the Sisters of the Assumption for allowing this study to be conducted in their kindergarten.

ABSTRACT

The purpose of this study was to try and identify predisposing factors which influence second language learning in pre-school children. Furthermore, it was designed to isolate as many of these factors as possible in order to determine their independent contributions to second language learning.

In order to accomplish the above, multiple linear regression analysis was used. Since the sample size was 33 this technique permitted the analysis of only three factors believed to be related to second language learning. Three factors which previous studies suggested would be most important were chronological age, attitude and intelligence.

In an attempt to identify other factors which may influence second language learning, a series of additional measures, principally French influence in the home, Stanford-Binet vocabulary, sex and socio-economic status were taken. Pearson Product Moment Correlations were calculated to find the degree of relationship between these variables and the following criteria, the Peabody test, a measure of aural skills, and a measure of oral skills.

The major findings of this study were:

1. Chronological age was the most important factor influencing second language learning in pre-school children, with regards to the learning of vocabulary and the acquisition of an understanding of the language. However, chronological

age did not correlate with learning of pronunciation.

2. Parental attitude was found to be a crucial factor in second language learning by pre-school children.
3. Success of pre-school children in second language learning was closely related to the degree to which that language was found in their homes.

The above findings suggest that pre-school children are able to learn a second language and the older the child is the more able he will be to learn the vocabulary and grasp an understanding of the second language. Learning of correct pronunciation, however, is not dependent on the age of pre-school children. Favorable parental attitude towards the culture of the second language and the influence of the second language in the home also facilitate second language learning in pre-school children.

TABLE OF CONTENTS

CHAPTER	PAGE
I. INTRODUCTION AND PROBLEM.....	1
(1) Introduction.....	1
(2) Problem.....	5
II. REVIEW OF RELATED LITERATURE.....	7
(1) Introduction.....	7
(2) Chronological Age.....	7
(3) Attitude.....	13
(4) Cognitive Level.....	17
III. DEFINITIONS, POSTUALTES AND HYPOTHESES.....	19
(1) Definitions.....	19
(2) Postulates.....	20
(3) Hypotheses.....	21
IV. EXPERIMENTAL DESIGN.....	23
(1) The Sample.....	23
(2) Tests.....	23
(3) Procedure.....	32
(4) Analysis.....	34
V. RESULTS.....	37
(1) Results Obtained Using PERSUB.....	37
(2) Results Using Pearson Product-Moment Correlations.....	40

CHAPTER	PAGE
VI. SUMMARY, CONCLUSIONS AND IMPLICATIONS.....	50
(1) Summary.....	50
(2) Findings.....	51
(3) Conclusions.....	52
(4) Implications for Research.....	52
(5) Implications for the Classroom.....	54
BIBLIOGRAPHY.....	55
APPENDIX A French Translation of the Peabody	
Picture Vocabulary Test.....	63
APPENDIX B Attitude Scale.....	65
APPENDIX C French Influence in the Home Inventory..	73
APPENDIX D Home Interview.....	76
APPENDIX E Raw Data.....	84
APPENDIX F Correlations Matrix.....	90

LIST OF TABLES

TABLE		PAGE
I.	Squared Multiple Correlation Coefficients Showing the Variance Contributed by Each Factor.....	38
II.	Correlations which were Higher than those Between the Attitude Scale and the Peabody Test.....	41
III.	Clinical Rating of Parental Attitude Towards French Culture as Correlated with Three Predictors.....	42
IV.	Correlations Between Socio-Economic Status and Achievement in French.....	43
V.	Correlations Between Socio-Economic Status and Three Predictors of the Amount of French found in the Home.....	44
VI.	Correlation Between French Influence in the Home and Achievement in French.....	45
VII.	Correlations Between Chronological Age and Achievement in French.....	45
VIII.	Correlation Between Cognitive Level and Achievement in French.....	46
IX.	Correlations Between Verbal Ability and Achievement in French.....	47
X.	Correlations Between Sex and Achievement in French	49

LIST OF FIGURES

FIGURE		PAGE
1.	The Distribution of I.Q. Scores.....	24
2.	The Distribution of C.A. Scores.....	25
3.	The Distribution of Blishen Index Scores.....	26
4.	The Distribution of French Influence in the Home Scores.....	27

CHAPTER I

INTRODUCTION AND PROBLEM

(1) INTRODUCTION

Don't worry about language while travelling abroad; there is always someone who speaks English. This advice assumes, of course, that you limit your travels to the large cities and to high-priced hotels and restaurants,.... It assumes also that you have no interest in attending the theatre, in listening to the radio or reading newspapers,Don't worry about language while travelling abroad; language is necessary only for understanding human beings.

William Riley Parker.

Mr. Parker's words appear to be wise indeed. However, he makes one false assumption. That assumption being that one will have to go to a foreign country in order to be in the situation he describes. In Canada, within the borders of Quebec, are more than five million Canadians who speak no, or very limited English. On the other hand, the fourteen million remaining Canadians speak little or no French. Thus, a person from Quebec travelling to other parts of Canada is for all intentional purposes in a foreign country, and the English speaking Canadian travelling to Quebec is in the same unenviable position.

Bilingualism has been one of the dominant themes in Canadian history. At the time of confederation it was decided

that Canada should be a bilingual country, with the French and English languages sharing an equal role in the nation's affairs. However, Canada is now approaching its centennial anniversary and as yet is still far from being a bilingual nation. Its politicians, with strong emotion, have argued at great length as to the blessings and curses of bilingualism, and seem to be no nearer agreement than they were 100 years ago. Thus, it would appear that to argue for, or against bilingualism would be a rather fruitless undertaking. Consequently, this paper will avoid this argument, and will work from the assumption that knowing more than one language is desirable.

Tan (1947) has defined four types of bilingualism:

- a. social, a second language is learned because of the close association of two people;
- b. political, the minority group is compelled to learn the language of the majority group where both groups live in the same political unit;
- c. colonial, the conquered majority is compelled to learn the language of the conquerors who constitute a minority of the population;
- d. cultural, a second language is needed in order to learn new ideas written in another language (p. 445).

Tan would probably be rather hard pressed if he were required to classify the Canadian situation in one of his categories, for it does not appear to be analogous to any of the situations which he describes. As the situation exists, Canada is a de jure bilingual country, but in point of fact it is composed of two large unilingual French or English speaking groups, of which only a few

members and bilingual. Why does this remain so after nearly 100 years of nationhood? Are Canadians so stupid that the vast majority of them are incapable of learning two languages? Or is it because they are a young nation and have not had an adequate communication system and teachers to propagate the two languages? Perhaps it has been the result of a chauvinistic attitude aimed at promoting parochial allegiance to one's ancestral language? Lambert (1963) would most likely support the last statement.

....an individual successfully acquiring a second language gradually adopts various aspects of the behavior which characterize members of another linguistic-cultural group. The learner's ethnocentric tendencies and his attitudes toward the other group are believed to determine his success in learning the new language (p. 114).

Furthermore, Singer (1956) maintains that:

The socio-political conditions under which a person acquires a foreign language will tend to affect his attitude towards both languages ... (p. 445).

Thus, it would appear that despite the fact that French and English are not foreign languages in Canada, a person learning one of them as a second language probably is greatly affected by the social and political situation which produce in him certain attitudes towards the second language. These attitudes then are reflected in the speed and efficiency with which the person will learn the second language.

A person's attitudes are most flexible in early childhood.

Moreno (1953) found that when:

Children in school were asked which of their classmates they would like to have seated next to them, there was no noticeable "racial" cleavage in the first three or four grades; here, too, it is evident that prejudice is acquired and is not native to the child (p. 514).

Thus, this is the time when parents and educators can be most effective in establishing favorable attitudes in children towards the learning of a second language. If this can be done then the child and later the adult will probably approach the study of a second language with a favorable attitude, and consequently a greater level of motivation. Williams (1963) believes that:

The most important factor in the situation appears to be motivation. The Welsh speaking child soon realizes that a knowledge of English is almost essential for living a satisfactory social and economic life... (p. 299).

There is a marked division which exists today between French-speaking and English-speaking Canadians with regards to bilingualism. If Canada is to become a de facto bilingual country this division must be overcome. However, how this will be done is a moot question which this study does not intend to deal with, but rather will leave it to the politicians to haggle over. Since bilingualism is such an important issue in Canada as well as in many other nations of the world such as Wales, India, and the Soviet Union, it is an appropriate area of scholarly inquiry.

Therefore, this study will investigate, and try to identify those factors which contribute to, or hinder the facility with which a person learns a second language. Thus, information will be provided for those who want to become bilingual, and to foreign language teachers, as to the effect which the investigated factors have on second language learning.

(2) PROBLEM

The purpose of this study is to attempt to identify those factors which influence second language learning in children.

Educators as well as laymen have noted that certain individuals appear to learn a second language more quickly than do others. However, educators have done little to identify those factors which influence a person's facility in second language learning. At present, studies in the literature concentrate on second language learning in adults and older children. However, according to Penfield and a commonly held belief among educators, young children can learn a second language far more easily than adults can. Penfield (1957) asserts that:

Remember that for the purpose of learning languages, the human brain becomes progressively stiff and rigid after the age of nine (p. 236).

Thus, it would follow that the most fruitful area of studying second language learning would be with children. Furthermore,

if Lambert's (1963) findings with regard to attitude being so important in second language learning is correct, then one should concentrate on young children, a group whose attitudes are easier to mold.

This study will deal with such measured variables as mental age, chronological age, parental attitude towards French culture, French influence in the home, Stanford-Binet vocabulary, sex, socio-economic status and their influence on achievement in oral French by a group of kindergarten children from the city of Edmonton.

CHAPTER II

REVIEW OF RELATED LITERATURE

(1) INTRODUCTION

Much speculation has been done in an attempt to account for the variability between individuals in their ability to learn a second language. This review will be restricted to that literature in the field of bilingualism which attempts to identify those factors involved in individual differences in ability to learn a second language. Emphasis will be placed on work done by Wilder Penfield, who maintains that neuro-physiological maturation is the crucial factor and Wallace Lambert who maintains that attitude is the crucial factor involved in second language learning.

(2) CHRONOLOGICAL AGE

Penfield maintains that a child's brain is specialized to the task of language learning. This specialization begins to drop off after about age nine and the brain gradually becomes senescent insofar as language learning is concerned.

Penfield (1959) maintains that:

The infant possesses a speech mechanism but it is only a potential mechanism. It is a clean slate, waiting for what that infant is to hear and see (p. 238).

Thus, if one does not take advantage of the child's special ability to learn languages, and teach him a second language when he is young, the advantage which he has is lost.

According to Penfield the direct method of language learning is the correct method, for it is based on the procedure by which the child is taught to speak by its mother. The direct method is based on the maturation of the brain. The intuition to learn language is thus inner directed rather than externally directed and is the same regardless of the number of languages to be learned. Penfield turns to neuro-physiology to support his position. He maintains that the immigrant child who picks up the local language quickly, while his parents fail to learn it, is an example of the specialized function of the child's brain, which makes him particularly apt at language learning. Penfield also sites cases of complete transfer of speech from one hemisphere of the brain to another, which occurs in childhood if the hemisphere in which speech is centered is damaged. Injuries of this kind which occur in adulthood often result in the injured person never recovering his speech.

If a person delays learning a second language until adolescence or adulthood, he will approach the learning of a second language by using verbal units of his mother tongue. Thus, although he may learn the language, he will probably speak with an accent and make many faulty constructions. According to Penfield

(1959) this problem results because:

...he begins to translate, and there is set up a new neuro-physiological process: indirect language learning (p. 251).

What Penfield is trying to tell educators is to take the physiology of the brain into consideration when teaching second languages.

In an attempt to check the validity of Penfield's hypothesis the Modern Language Association sent out a statement, which expressed Penfield's views, to a number of leading neurologists and psychiatrists. The purpose of this was to see if they agreed with his main contention, that young children learn a second language more easily than adults. In the newsletter reporting results, the replies of ten neurologists and three psychiatrists were reported. Seven of the ten neurologists were in agreement with Penfield's statement while the three psychiatrists did not agree with him. Miel (1954) summarized the main issues upon which these men based their criticisms.

1. Generally speaking, childhood is a time when language is learned easily, but it is not the only time, and in the case of some individuals with language difficulty it may be the poorest time to introduce a second language.
2. The foreign language learned in the elementary school may be forgotten unless used.
3. In making a decision on foreign language in the elementary school, educators must take into account more than ease of acquiring a good accent (p. 145).

Despite these criticisms the majority of the authorities in the field supported his hypothesis.

Further support for Penfield's hypothesis comes from Williams (1963) who reports that:

Experience in Wales supports the view expressed by several neurologists in recent years and endorsed by a meeting of experts at Hamburg in April, 1962, that the earlier the child is introduced to a second language the better, if bilingualism is the linguistic aim (p. 299).

Villegas (1958) maintains that by the time the child has entered high school his speech mechanism is set and it is very difficult to acquire the proper accent and intonation. He quotes Dr. Frances Ilg as saying that:

The optimum age for beginning the continuous learning of a second language seems to fall within the span of ages four through eight. In this early period, the brain seems to have the greatest plasticity for acquiring speech (p.136).

One cannot help but notice the similarity between the statement of Dr. Ilg and Penfield's position.

Girard (1955) believes that only by starting second language teaching in the early grades will a degree of mastery in the language be assured. For after the age of twelve children become less able to imitate sounds accurately and become self conscious about their performance.

Hildreth (1959) agrees that children definitely have a predisposition towards second language learning. However, this predisposition exists in the form of a process of acting out and doing things with the second language which accounts for their superior

performance.

Andersson (1953) agrees that children learn a second language more readily than adults. However, he is very critical of language educators for not bringing forth empirical evidence to prove their point.

Persky (1954) maintains that between the ages of six and eleven a child can learn another language without being self conscious and without analysing it. However, after age twelve the process is complicated by his demand for logic and he loses his former capacity to be bilingual.

In view of the above studies it has been rather conclusively shown that the time for learning a second language is during childhood. However, some studies report that it is the ability to learn the oral aspect of the language which children are so adept at.

Bishop (1940) found that well chosen elementary school children could progress as fast as, or faster than junior high school children, if the oral aspect of language was emphasized. Thus, he believes that the elementary school years may well be the optimal time for persons to learn the oral aspects of a second language.

Dunkel and Pillet (1956) found that the pronunciation of children in their group was on a whole superior to that of an adult class given an equal amount of instruction time. Furthermore

there was a marked difference in the types of errors made by the two classes. Adults were satisfied with pronunciations which were nearly correct and resembled sound patterns in their mother tongue. Their errors were usually in the form of carrying patterns of pronunciation of their mother tongue over to the language which they were learning. Children, on the other hand made a wider variety of sound errors, but corrected them more quickly to the proper pronunciations by a process of mimicry.

Hobbs (1953) points out that any decision to include a second language in the elementary school should be done in terms of the objectives sought. He believes that childhood years are the ones in which a person can learn concepts of a second language most directly. However, he also believes that in early adulthood the individual has the greatest overall learning ability. He maintains that if we want to know a second language in order to appreciate the writings of another linguistic group, then the emphasis in second language learning in high school is correct. However, if better communication between various nations, in order to improve international relations, is our goal, then it should be introduced at the elementary level.

Most studies have concerned themselves with trying to ascertain whether children or adults could learn a second language more effectively. It has been shown that children appear to be more able, especially with regards to the oral aspects of language learning.

The previous studies indicate that the maximum age for effective second language learning lies somewhere between nine and twelve years of age. Two investigators, Smith and Kaulfers have concerned themselves with a somewhat different aspect of the problem. They have tried to find out if there is also a minimum age below which second language learning is impractical.

Smith (1949) found that it is unwise to start children who were as young as the ones in his sample (37-77 months) in second language learning. He came to this conclusion on the basis of their performance on a vocabulary test.

Kaulfers (1952) maintains that if the child can hold his own with his peers in his mother tongue then he can safely begin to learn a second language.

Ellert (1953) as well as Girard (1955) believe that educators should take advantage of the natural interest present in many children to develop codes and secret languages. This can serve as a good basis for motivating second language learning.

(3) ATTITUDE

Lambert believes that the student's attitude toward the culture associated with the language he is learning is the crucial factor influencing his effective learning of that language. One should not be misled by the above emphasis, and adopt the view that Lambert believes attitude is the only factor which affects second language

learning, for this is not the case, he has taken a multi-dimensional approach to the study of bilingualism.

Lambert maintains that people who have the most favorable attitude towards a group whose language they are learning, are the ones who will experience the least difficulty in learning the language. Support for this position can be found in several studies which Lambert has conducted. Some of which were done in Maine, Connecticut and Louisiana. Lambert (1963) found that those persons with the most favorable attitude towards a given group, experienced the least amount of difficulty in learning their language.

The Maine group had the most favorable attitude towards Franco-American heritage and as a result they were the ones most proficient in French (p. 118).

In contrast it was found that in Louisiana, where the attitude towards French was much more negative than in Maine, French was surviving far less well. Furthermore, it was discovered that persons of a bilingual or bicultural heritage tended to remain identified with one culture or the other or else be alienated from both. However, those who became bilingual were less prejudiced and maintained a favorable attitude towards both groups. When dominance of one or another of the bilingual languages was found it was believed that this was probably due to a more favorable attitude towards that cultural group. This difference can be accounted for in terms of how one learns one's first language. Lambert (1963) found that, as in the learning of a first language, learning of a second

language is strongly influenced by the significant persons in one's life.

Language learning is motivated by a basic desire to be like valued people in one's environment (p. 115).

One's degree of success at a task is largely a function of one's desire to do well at the task. Therefore it is reasonable to assume that this would also be true of language learning. Studies conducted by Tireman (1961) at the University of New Mexico have shown that:

Desire with which a person approaches the learning of a second language is important, in his probable success in it (p. 310).

Williams (1963) and Jones (1954) lend support to Tireman's position. Lambert is more refined in this area and divides desire to learn a second language, into two types of orientations. First, an instrumental orientation, which is the learning of a language for some practical use, such as obtaining a job. The second orientation is an integrative one, in which one learns the language because he wants to become a part of the culture of which the language is a part. Lambert (1963) points out:

...students integratively oriented were the more successful in second language learning as contrasted with those instrumentally oriented (p. 115).

Furthermore, in the same article it is demonstrated that:

French skills, whose development depended on the use of language in a communication setting,

was determined solely by measures of an integrative motivation to learn French (p. 115).

Thus, the integrative motivation which is a reflection of a more positive attitude, is a better indicator of successful learning of French.

One does not exist in a vacuum, and his behavior insofar as second language learning is concerned is reflected in his adjustment to his primary cultural group. Lambert (1963) found that the serious scholar of a second language will become more and more alienated from his group as he becomes more seriously involved in the learning of another language.

A study conducted at McGill has shown that many serious students of French at McGill experience a sensation of anomie with regards to their original cultural group (p. 114).

Lambert's position, however, is somewhat weak for he neglected an important factor in his study, that is the degree to which those who became serious students of French were already alienated from their culture when they began to study French.

The learning of a second language is closely related to one's family associations. Studies have shown that parental attitudes towards French is a more important factor in learning French than is the level of French used in the home. Lambert (1963) found that students who have parents with positive attitudes towards French tended to share this attitude with them.

Students with integrative dispositions to learn French had parents who also were integrative and

sympathetic to the French Community. (p. 116).

Closely related to the influence of parental attitudes concerning French upon the learning of French by their children, is the influence of the socio-economic status of the family upon the learning of French. It appears that persons from families of upper socio-economic status are more interested in second language learning. Support for this position was found by Anisfeld and Lambert (1963) in a study of Jews in Montreal.

Jones (1949) lends support to Lambert's emphasis on attitudes. He found that there was a significant sex difference in second language learning in favor of girls. He concludes that this difference results from the girls having a more favorable attitude towards the second language.

In view of the support given to the superiority of children in language learning, it is strange that Lambert has restricted his studies primarily to adult and adolescent groups. Only once did he deal with children, and they were ten and eleven year olds, who according to Penfield have entered a stage of senescence as far as language learning is concerned.

(4) COGNITIVE LEVEL

Hobbs (1955) reports that many studies show positive relationships between common measures of intelligence and achievement in a second language. On the whole these correlations are similar

to those usually obtained between intelligence and academic success, .50. Furthermore, he maintains that there are studies reporting similar correlations for aural comprehension. This being true the higher the mental age of the child the more effectively he will be able to learn a second language. Therefore, following these findings it would be logical to delay the teaching of a second language until the upper grade levels.

Dunkel and Pillet (1957) have found correlations between intelligence and achievement in second language learning which are rather contradictory to those of Hobbs. They have found correlations of .28 between intelligence and second language achievement.

Olson (1962) found that verbal intelligence tests are more highly correlated with academic achievement than are non-verbal intelligence tests. Thus, one would expect to find a higher correlation between second language achievement, an academic subject, and performance on the verbal portion of the test rather than between second language achievement and the total intelligence test.

The foregoing review of the literature clearly points to a gap in research dealing with second language learning. That gap is, what effect does attitude have upon the ability of young children to learn a second language?

CHAPTER III

DEFINITIONS, POSTULATES AND HYPOTHESES

(1) DEFINITIONS

1. Bilingualism: For our purpose we may say that it describes the language behavior of an individual who possesses a mother tongue and also another language, in whole or in part. This implies that bilingualism is not necessarily a state eventually arrived at after long experience in a second language. Rather, it is a cumulative process built up gradually as one language is held in abeyance while the other functions. As soon as an individual can play his part authentically in a situation involving the new language (this means of course, without reference to the mother tongue) he is to that extent bilingual (Brooks 1964).
2. Culture: A system of socially acquired and transmitted standards of judgment, belief, and conduct as well as the symbolic and material products of the resulting conventional patterns of behavior (Lundberg, et al. 1963).
3. French Achievement:
 - a. The degree to which an individual's raw score on a French translation of the Peabody Picture Vocabulary Test has changed over a four month period of time.

- b. The degree to which an individual's understanding of French has improved over a four month period of time as measured by the classroom teacher.
 - c. The degree to which an individual's ability to pronounce French sounds has improved over a four month period of time as measured by the classroom teacher.
- 4. Intelligence: The mental age score as measured by the Stanford-Binet Intelligence Scale, Form L-M.
- 5. Socio-Economic Status: The score attained on the Blishen Index (Blishen 1958).
- 6. French Influence in the Home: The score attained on the French Influence in the Home Inventory, which was designed for this purpose.
- 7. Parental Attitude Towards the French Culture: The score attained on the attitude scale developed for this purpose.
- 8. Verbal Ability: Score on the Stanford-Binet Intelligence Scale, Form L-M, vocabulary section.

(2) POSTULATES

- 1. Neurological maturation is a necessary precondition for second language learning.
- 2. Learning of a second language is a function of cognitive level as assessed by the Stanford-Binet Intelligence Scale, Form L-M.

3. Learning of a second language by children is a function of environment, specifically parental pressure to achieve and parental attitude toward the culture of the second language.

(3) HYPOTHESES

1. Cultural factors will be associated with the degree of achievement in French.
 - a. The variable having the highest correlation with French achievement will be parental attitude towards French culture.
 - b. Children having an upper socio-economic background will exhibit a greater degree of French achievement than children from a lower socio-economic background.
 - c. The greater the influence of French in the home, the greater the French achievement.
2. Neuro-physiological maturation will be associated with the degree of achievement in French.
 - a. There will be a greater improvement in French achievement found among older members of the class than among younger members of the class.
3. There will be a positive relationship between cognitive level and achievement in French.
4. Verbal ability will be associated with the degree of achievement in French.

- a. Those children having the greater verbal ability will show a greater improvement in French achievement.
- b. There will be a greater improvement in French achievement among girls than among boys.

CHAPTER IV

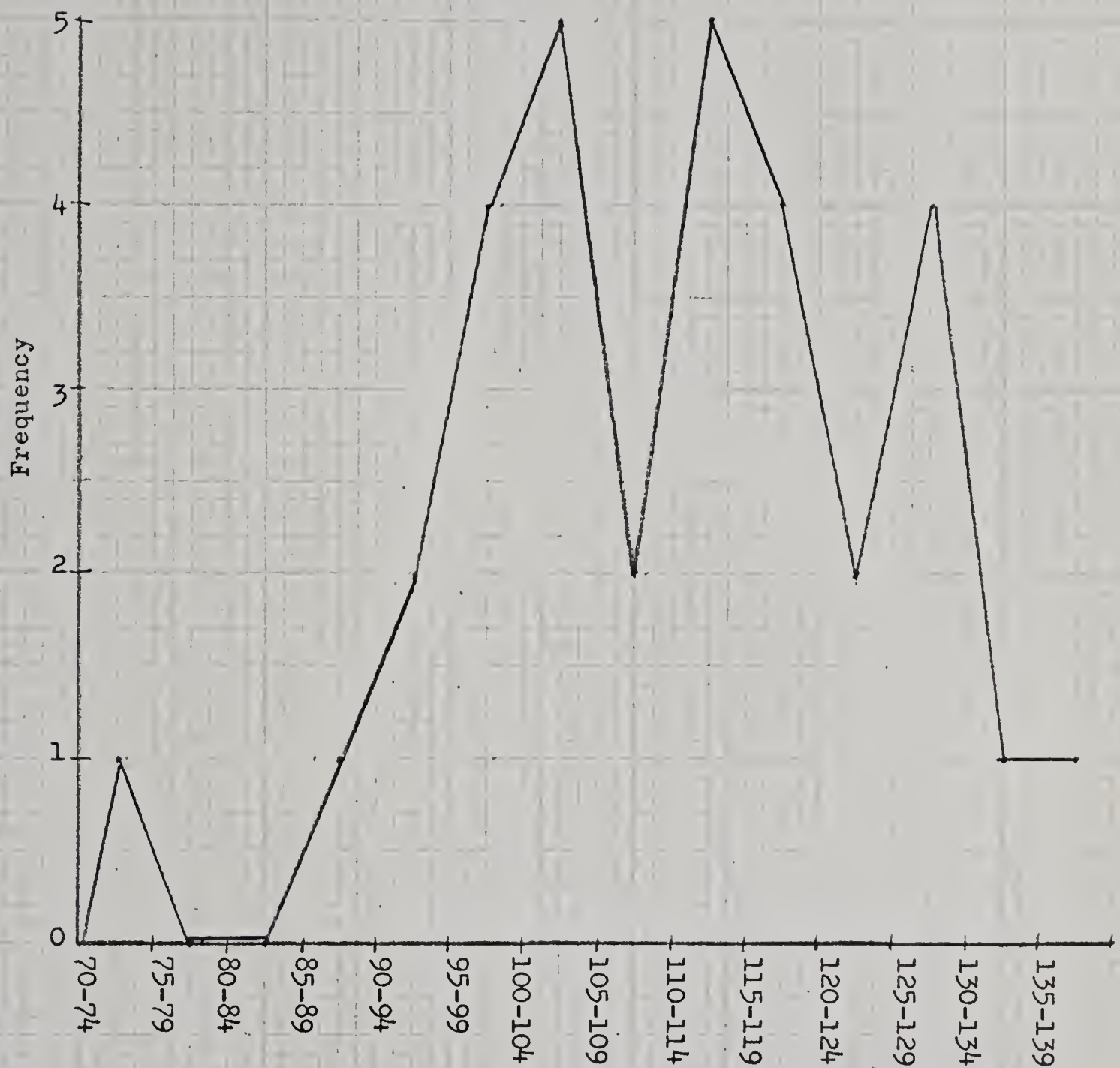
EXPERIMENTAL DESIGN

(1) THE SAMPLE

The sample consisted of 33 children, 11 males and 22 females. They were enrolled in a French language kindergarten, operated by the Sisters of the Assumption, in the city of Edmonton. Although this institution was operated by a Catholic organization, enrollment was not restricted to Catholics, and several non-Catholic students were enrolled. Furthermore, although the kindergarten was located in an older section of the city, it drew its students from all portions of the city, thus, the sample was not restricted to a limited geographical area. The following figures demonstrate some of the characteristics of the sample.

(2) TESTS

The Stanford-Binet, Form L-M (1960) was used because it has a great deal of appeal to children and is very appropriate to the group we were dealing with. Furthermore, its division into half-year groupings during pre-school ages takes into account the rapid growth in intelligence that takes place during this age period. At ages 2-6 to 5-7, the reliability coefficients range from .83 to .91.



I.Q. Scores

\bar{X} : 110.24
S.D.: 15.24

FIGURE 1

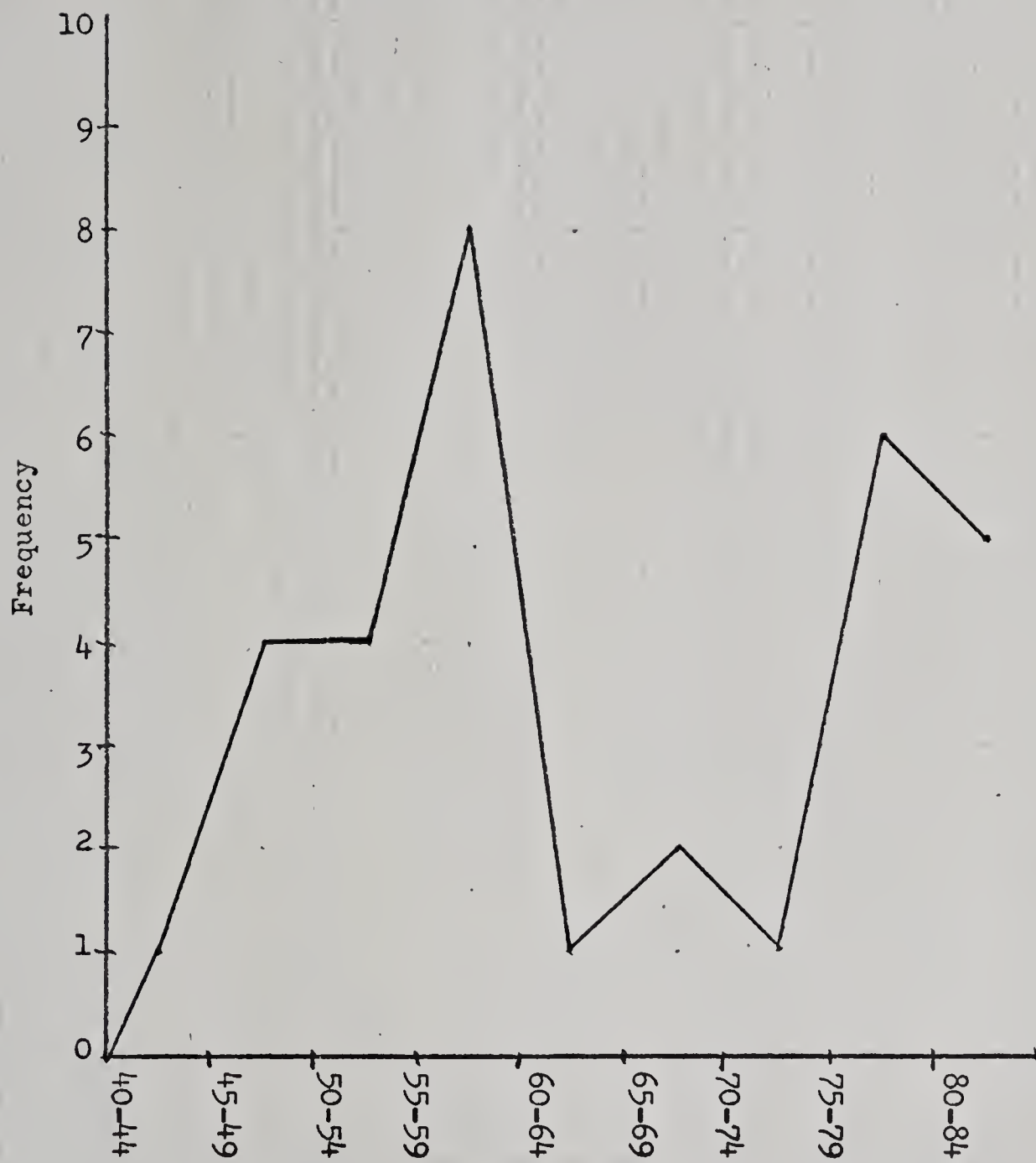
The Distribution of I.Q. Scores



\bar{X} : 60.39
S.D.: 7.27

FIGURE 2

The Distribution of C.A.

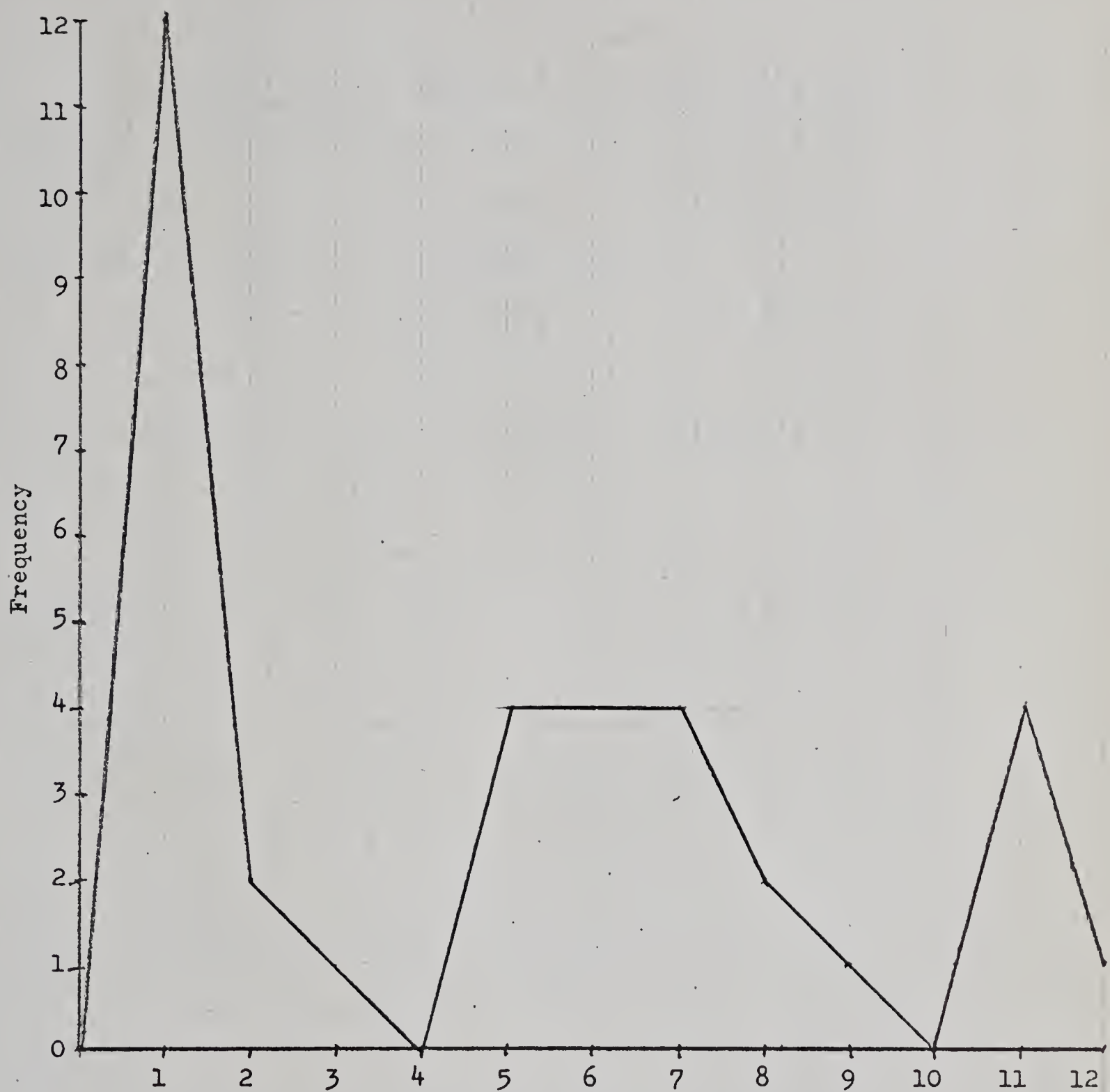


Blishen Index

\bar{X} : 63.11
S.D.: 13.32

FIGURE 3

The Distribution of Blishen Index Scores



French Influence in the Home

\bar{X} : 4.70
S.D.: 3.77

FIGURE 4

The Distribution of French Influence in the Home Scores

The Peabody Picture Vocabulary Test (1959) was selected because of its appropriateness to this study. It was designed for the purpose of obtaining an estimate of a person's verbal intelligence by measuring his hearing vocabulary.

Three general advantages which it has are as follows: It covers a wide range of ability; it provides for a completely objective method of scoring; it is completely untimed consequently it is a power rather than a speed test.

This test is designed so that the pictures the testee is presented with are most likely to be in line with his level of ability; i.e., the beginning pictures are designed so as to be appropriate for young children. Since the subject is not required to read, this scale is particularly suited for non-readers; i.e. pre-school children. Furthermore, the speed in administration, 10-15 minutes, plus the interest value it has tends to establish good rapport, thus making it particularly well suited for use with pre-school children, such as those in this study.

A measure was required of the subjects verbal ability in French, so the Peabody Picture Vocabulary Test was adapted to this need. This was done by translating it into French. This

translation was done by a professor of French from the University of Alberta in collaboration with the classroom teacher. (See appendix A).

The Blishen Occupation Class Scale (1958) was used because it is the best available scale to give us a measure of socio-economic level in the Canadian situation. This scale is based on the 1951 Canadian Census and classifies occupations on a variety of characteristics, income and years of schooling being of primary importance.

A Scale of Parental Attitude Towards the French Culture was designed in the following way. An initial group of thirty-seven statements, judged to be relevant to attitude towards French culture was drawn up. These items were administered to two groups of first year students in Education: one group of 35 French-speaking students from College St. Jean and one group of 31 English-speaking students from the University of Alberta in Edmonton. The responses to the items, recorded on separate answer sheets, were: Strongly agree, Agree, Undecided, Disagree, and Strongly Disagree. The responses of the two groups were compared for discrimination between groups using the Kolmogorov-Smirnov technique. Thirty-one of the thirty-seven items were found to discriminate between the French-speaking and English-speaking groups. It was assumed that the differences between groups showed a difference in attitude towards the French culture, as exhibited by French-speaking

and English-speaking Albertans. In summary, this attitude scale was designed following the pattern outlined by the standard Likert method of attitude scale construction, (Adams 1964).

The scoring technique used on this attitude scale was as follows: Those items of the scale that discriminated between the French-speaking and English-speaking groups were examined in order to determine the direction of the difference between groups. Adjacent cells were combined so that no expected cell frequencies of less than one and no more than one cell per item with an expected frequency of less than five were included. Chi-square values were then computed for each item.

The scoring was determined by examining the cells in the chi-square contingency tables. A score of 2 was assigned to responses given primarily by the French-speaking group, a score of 0 to responses given primarily by the English-speaking group, and scores of 1 to responses falling in between. For some items it was not deemed appropriate to give scores of 1 to any response. (See appendix A).

French Influence in the Home was determined by a home interview. These interviews were conducted in order to establish the degree to which the individual child had the opportunity to come in contact with French in his home. (See appendix C).

Rating of Integrative Orientation (Lambert 1960), was obtained by having parents rate, on a seven point scale, the extent to

which four integrative reasons for studying French were descriptive of the reasons why they wanted their child to learn French. (See appendix D).

Rating of Instrumental Orientation (Lambert 1960), was obtained by having parents rate, on a seven point scale, the extent to which four instrumental reasons for studying French were descriptive of the reasons why they wanted their child to learn French. (See appendix D).

Achievement in Aural French (Lambert 1959), was measured by the kindergarten teacher, who ranked each student on a seven point scale, representing the amount of improvement which she believed the child had made, with regard to understanding French, during the four month period of the study.

Achievement in Oral French (Lambert 1959), was measured by the kindergarten teacher, who ranked each student on a seven point scale, representing the amount of improvement which she believed the child had made, with regard to French pronunciation, during the four month period of the study.

Degree of Nationalism was obtained by means of a home interview with the child's mother. On the basis of the parent's responses to a series of topics related to Canadian affairs, she was assigned a rating. (See appendix D).

Degree of Prejudice was obtained by means of a home interview with the child's mother. Ratings were assigned on the basis

of the parent's responses to a series of topics related to French individuals (See appendix D).

(3) PROCEDURE

The children were brought to the Education Clinic of the University of Alberta in two groups. One group came in the morning, while the other came in the afternoon. The Stanford-Binet Intelligence Scale, Form L-M, was administered to them in order to obtain a measure of their mental ages. After this testing period each child was allowed to go to a playroom where his teacher and several classmates were located. This was done in order that each child would have a rest period between testing sessions. After being in the playroom for a while, the child was once more taken to a testing cubicle where a French translation of the Peabody Picture Vocabulary Test was administered to him, in order that a measure of his French vocabulary could be obtained.

Within the next two weeks every child's mother was contacted in order to get a measure of the socio-economic level of the family and the amount of French influence present in the home. In every case the initial contact was made by telephone. In all cases the interviewer attempted to conduct the interview in French, in order to get an accurate measure of how fluent the child's mother was in French.

As soon as all the telephone interviews were completed each child was given a copy of the Attitude Towards French Culture Scale to take home for his parents to complete. There was a one hundred

percent return of these scales.

Four months after the original testing period at the Education Clinic of the University of Alberta, the French translation of the Peabody Picture Vocabulary Test was re-administered to the children at the kindergarten, in order to obtain a measure of the degree to which they had improved in French over the four month period. This time the testing was done by the author, who is fluent in the French language. A further measure of their improvement in French was obtained by having their teacher rank them on a seven point scale, showing the degree to which they had improved in aural and oral skills over the four month period.

Immediately following the testing of French ability at the kindergarten, the author proceeded to conduct home interviews with the children's mothers. These interviews were divided into two parts. Part one was a structured interview in which a standard set of questions was presented to the mothers to answer. This was done in order to get a series of measures on their attitudes towards rather specific items regarding French culture and their relationships with it. The second part of the interview was unstructured. It had a two-fold purpose. The first was to confirm the socio-economic ratings and the degree of French in the home ratings, which had been obtained over the telephone. Secondly, it attempted, by way of a general discussion of certain key issues

regarding French-English relations in Canada, to get a clinical estimate of the home attitude towards the French culture.

(4) ANALYSIS

The multiple linear regression analysis, developed by Bottenberg and Ward (1963), was used to analyze the data accumulated by this study. The computer used in this analysis was the IBM 7040, located at the University of Alberta computing center.

The approach is to express a criterion variable as a linear combination of a set of predictors, and an error term. The aim is to find a set of weights which minimize the sum of squares of the elements of the error term. These weights are called least square weights.

To test the hypotheses in this study models similar to the following one were used.

Unrestricted Model:

$$Y = a_0u + a_1x(1) + a_2x(2) + a_3x(3) + e_F$$

Restricted Model:

$$Y = a_0u + a_2x(2) + a_3x(3) + e_R$$

Y = criterion vectors

u = unit vectors

a_0, a_1, a_2, a_3 , and a_4 = least square weights associated with predictor vectors.

e = error vector

The deletion of vector $x(1)$ from the unrestricted model yields information which tells us whether information in vector $x(1)$ significantly improves the prediction of the criterion Y in the presence of vectors $x(2)$ and $x(3)$.

An F statistic*, tests the hypothesis to see that there exists no difference in prediction, between that obtained from the unrestricted model as compared with that obtained from the restricted model.

PERSUB (Davis 1963) is the name assigned to the computer program used in this analysis. It dealt with the following predictors and criteria.

<u>Predictors</u>	<u>Criteria</u>
1. Parental attitude towards French culture scale	1. A French translation of the Peabody Picture Vocabulary Test
2. Chronological age	2. A measure of aural skills
3. Mental age	3. A measure of oral skills

In addition to the above analysis Pearson Product-Moment Correlations were calculated for a series of additional predictors and the same criteria as used above.

4. Stanford-Binet vocabulary
5. Blishen Index
6. Sex

*See Bottenberg and Ward, page 126.

7. Home level of French
8. Integrative orientation
9. Instrumental orientation
10. Degree of nationalism
11. Degree of prejudice
12. Mother's rating of child's French
13. Mother's self rating of French
14. Mother's rating of father's French
15. Favouritism for European French
16. Desire for French identity
17. French acquaintances
18. I.Q.
19. Clinical rating of attitude towards French culture.

CHAPTER V

RESULTS

The raw scores and the correlation matrix derived from data gathered in this study can be found in appendices E and F.

(1) RESULTS OBTAINED USING PERSUB

Table 1 indicates that criterion 1, the French translation of the Peabody Picture Vocabulary Test, has squared multiple correlation coefficients (RSQ) which are different from 0 at the $P < .01$ level of significance. Criterion 1 also accounts for 48.2 per cent of the variance. When variable 1, attitude towards French culture is partialled out of the unrestricted model associated with criterion 1, there is a loss of information which is significant at the $.05 < P < .06$ level. When attitude is partialled out only 40.8 per cent of the variance is explained. Therefore, attitude accounts for 7.4 per cent of the variance. When variable 2, chronological age, is partialled out of the unrestricted model associated with criterion 1, there is a loss of information which is significant at the $P < .05$ level. When chronological age is partialled out 40.1 per cent of the variance is explained. Therefore chronological age accounts for 8.1 per cent of the variance. When variable 3 mental age, is partialled out of the unrestricted model associated with criterion 1, there is no significant loss of information.

Criterion 2, teacher's rating of aural skills has

TABLE 1

SQUARED MULTIPLE CORRELATION COEFFICIENTS SHOWING
VARIANCE CONTRIBUTED BY EACH FACTOR

Criteria	Variable Partialled Out	Proportion of Variance Contributed RSQ	Significance F test
	Unrestricted Model	.482	$P < .01$
	Restricted Models		
1*	1. Attitude	.408	$.05 < P < .06$
	2. C.A.	.401	$P < .05$
	3. M.A.	.447	Not sig.
	Unrestricted Model	.267	$P < .05$
	Restricted Models		
2**	1. Attitude	.252	Not sig.
	2. C.A.	.082	$P < .01$
	3. M.A.	.237	Not sig.
	Unrestricted Model	.103	Not sig.
	Restricted Models		
3***	1. Attitude	.099	Not sig.
	2. C.A.	.026	Not sig.
	3. M.A.	.087	Not sig.

df 1 and 29

* Peabody Test

** Aural Skills

*** Oral Skills

squared multiple correlation coefficients which differ from 0 at the $P < .01$ level of significance. It also accounts for 26.7 per cent of the variance. When variable 2, chronological age, is partialled out of the unrestricted model associated with criterion 2, there is a loss of information which is significant at the $P < .01$ level. When chronological age is partialled out 8.2 per cent of the variance is accounted for. Therefore, chronological age accounts for 18.5 per cent of the variance. When variables 1 and 3 are partialled out of the unrestricted model associated with criterion 2, there is no significant loss of information.

Criterion 3, teacher's rating of oral skills, has squared multiple correlation coefficients which do not differ significantly from 0 nor do any of the variables when partialled out from the unrestricted model associated with criterion 3 result in any significant loss of information.

Hypothesis 1a

The hypothesis, that the variable having the highest correlation with French achievement will be parental attitude towards French culture, although not supported by these findings, a trend in the predicted direction was present using criterion 1.

Hypothesis 2a

The hypothesis, that there will be a greater improvement in French achievement found among older members of the class than among younger members of the class, is supported by the results obtained

using criteria 1 and 2.

Hypothesis 3

The hypothesis, that there will be a positive relationship between cognitive level and achievement in French was not supported by these results.

(2) RESULTS USING PEARSON PRODUCT-MOMENT CORRELATIONS

A further analysis of the data was done using Pearson Product-Moment Correlations, in order to verify those hypotheses which could not be handled by PERSUB due to the small number of cases in our sample. Furthermore, it was hoped that other significant variables affecting second language learning would be identified. This analysis was very broad in scope and necessarily some of the apparent significant relationships which were found could be due to chance. Thus, it is necessary to keep this limitation in mind when considering the findings of this study.

Hypothesis 1a

The hypothesis, that the variable having the highest correlation with French achievement will be parental attitude towards French culture, does not appear to be supported.

Table 2 suggests that parental attitude towards the French culture, as measured by the attitude scale, may not be as significant a factor in second language learning as was hypothesized. Correlations in Table 2 suggest that mental age, chronological age, home level of French, mother's level of French and French acquaintances are more important variables which affect the learning of French.

TABLE 2

CORRELATIONS WHICH WERE HIGHER THAN THOSE BETWEEN
THE ATTITUDE SCALE AND THE PEABODY TEST

Predictors	Peabody Test	Aural Skills	Oral Skills
Mental Age	.529**	.171	.089
Chronological Age	.622**	.463**	.282
Stanford-Binet Vocabulary	.381*	-.125	-.185
Home Level of French	.332*	.546**	.530**
Degree of Nationalism	.385*	.288	.151
Mother's level of French	.245	.430**	.397*
French Acquaintances	.530**	.513**	.327*
Clinical Rating of Attitude Towards French Culture	.431**	.719**	.615**
<u>Attitude Scale</u>	.359*	.233	.135

*Significant at the .05 level.

**Significant at the .01 level.

However, the last three variables mentioned in the above list may be a reflection of attitude towards French culture. The high correlations found between these three variables in Table 3, and the clinical rating of parental attitude towards French culture would tend to support this view.

TABLE 3

CLINICAL RATING OF PARENTAL ATTITUDE TOWARDS FRENCH
CULTURE AS CORRELATED WITH THREE PREDICTORS

Predictors	Clinical Rating
Home Level of French	.587**
Mother's Level of French	.479**
French Acquaintances	.592**

**Significant at the .01 level.

The high significant correlations in Table 2, between French achievement and the clinical rating of parental attitude towards French culture, would appear to indicate that there may be a fault in the attitude scale designed to get a measure of parental attitude towards French culture. Thus, attitude may in fact still be the crucial variable affecting second language learning and that it would be presumptuous to reject this hypothesis at this time.

TABLE 4

CORRELATIONS BETWEEN SOCIO-ECONOMIC STATUS AND
ACHIEVEMENT IN FRENCH

Predictor	Peabody Test	Aural Skills	Oral Skills
Blishen Index	-.333*	-.266	-.234

*Significant at the .05 level.

Hypothesis 1b

The hypothesis, that children having an upper socio-economic background will exhibit a greater degree of French achievement than children from a lower socio-economic background, appears to be rejected.

Table 4 leads one to hypothesize that the relationship between socio-economic status and achievement in French would be in the opposite direction to the original hypothesis.

TABLE 5

CORRELATIONS BETWEEN SOCIO-ECONOMIC STATUS AND THREE
PREDICTORS OF THE AMOUNT OF FRENCH FOUND IN THE HOME

Predictors	Blishen Index
Home Level of French	-.312*
Mother's Level of French	-.277
French Acquaintances	-.322*

*Significant at the .05 level.

In Table 5 correlations between the Blishen Index and three predictors, which are highly correlated with achievement in French (See table 2) and closely related to the amount of French present in the home, were examined, and significant negative correlations were found. This suggests that those children from lower socio-economic families came from homes which were predominantly French. Thus, due to the nature of this sample any rejection of the original hypothesis must be qualified in terms of the findings shown in Table 5.

TABLE 6

CORRELATIONS BETWEEN FRENCH INFLUENCE IN THE HOME AND
ACHIEVEMENT IN FRENCH

Predictor	Peabody Test	Aural Skills	Oral Skills
French Influence in the home	.322*	.546**	.530**

*Significant at the .05 level.

**Significant at the .01 level.

Hypothesis 1c

The hypothesis, that the greater the influence of French in the home, the greater the French achievement, is accepted because of evidence presented in Table 6.

TABLE 7

CORRELATIONS BETWEEN CHRONOLOGICAL AGE AND ACHIEVEMENT
IN FRENCH

Predictor	Peabody Test	Aural Skills	Oral Skills
Chronological Age	.622**	.463**	.282

**Significant at the .01 level.

Hypothesis 2a

The hypothesis, that there will be a greater improvement in French achievement found among older members of the class was partially verified.

Table 7 indicates that the Peabody test and the measure of aural skills lend strong support to the hypothesis, but the oral measure of French does not. This relationship appears to indicate that pronunciation of French sounds can be taught more effectively to the younger children in this sample than vocabulary and an understanding of French. These results are in agreement with those found in the analysis using PERSUB, where it was found that oral achievement in French was not predicted by chronological age, mental age or parental attitude towards the French culture.

TABLE 8

CORRELATIONS BETWEEN COGNITIVE LEVEL AND
ACHIEVEMENT IN FRENCH

Predictor	Peabody Test	Aural Skills	Oral Skills
Mental Age	.529**	.171	.089

** Significant at the .01 level.

Hypothesis 3

The hypothesis, that there will be a positive relationship between cognitive level and achievement in French, seems to be partially supported.

It appears that the hypothesis is valid with regard to the learning of vocabulary. However, it appears to be only moderately true in relation to the understanding of French, and is rejected with regard to learning French pronunciation. The high level of significance of the correlation between mental age and the translated Peabody test should be taken with a grain of salt, for the results of the PERSUB analysis indicate that the presence of the vector, mental age, does not significantly improve the prediction of criterion 1, the Peabody test.

TABLE 9

CORRELATIONS BETWEEN VERBAL ABILITY AND ACHIEVEMENT IN FRENCH

Predictor	Peabody Test	Aural Skills	Oral Skills
Verbal Ability	.381*	-.125	-.185

*Significant at the .05 level.

Hypothesis 4a

The hypothesis, that those children having the greater verbal ability will show a greater improvement in French achievement, can neither be accepted nor rejected on the basis of the results of this sample.

The results which appear in Table 9 seem to be somewhat contradictory, however, a careful examination of the sample can explain the discrepancy. The significant relationship between verbal ability and Peabody test scores may be explained in terms of a communality which exists between the two tests, in that they are both attempting to get a measure of vocabulary. The slight negative correlations between verbal ability on the one hand and aural and oral skills on the other is probably due to the fact that those children from dominantly French homes showed the greatest improvement in French achievement. There was also a negative correlation of $-.312$ between home level of French and verbal ability. Consequently, in this sample, there would almost have to be a negative correlation between French achievement and verbal ability.

TABLE 10

CORRELATIONS BETWEEN SEX AND ACHIEVEMENT IN FRENCH

Sex	Peabody Test	Aural Skills	Oral Skills
Boy	.081*	-.169	-.264

*A correlation of .292 is needed in order for it to be significant at the .05 level.

Hypothesis 4b

The hypothesis, that there will be a greater improvement in French achievement among girls than among boys, is rejected.

Table 10, although it has a correlation of .264 between girls and oral skills which may point out a trend towards a sex linked factor in language learning, clearly demonstrates that there is no sex linked factor influencing second language learning with regards to this sample.

CHAPTER VI

SUMMARY, CONCLUSIONS AND IMPLICATIONS

(1) SUMMARY

The purpose of this study was to try and add to the knowledge of second language learning. This was done by attempting to identify those factors which influence second language learning in pre-school children.

There are marked differences between individuals insofar as their ability to learn a second language is concerned. The basic problem was identifying those factors which account for these differences in performance.

The sample used in this study consisted of a group of 33 students from a French language kindergarten. Three criteria of achievement in French were used. These were, a French translation of the Peabody Picture Vocabulary Test, a measure of aural skills and a measure of oral skills.

A series of measured variables were used and the following were the ones upon which the hypothesis of this study were based, mental age, chronological age, parental attitude towards French culture, French influence in the home, Stanford-Binet vocabulary, sex and socio-economic status.

(2) FINDINGS

1. On the basis of the results of the present study the hypothesis, that the variable having the highest correlation with French achievement would be parental attitude towards French culture, was rejected. Although attitude was an important variable it was not the most important one.

2. The hypothesis, that children having an upper socio-economic background would exhibit a greater degree of French achievement than children from a lower socio-economic background, was rejected.

3. The hypothesis, that the greater the influence of French in the home, the greater the French achievement, was supported by this study.

4. The results of this study support the hypothesis, that there will be a greater improvement in French achievement found among older members of the class, when the Peabody test and the measure of aural skills were used as criteria.

5. The hypothesis, that there will be a positive relationship between cognitive level and achievement in French, was rejected.

6. On the basis of the results of this study, the hypothesis that those children having the greater verbal ability will show a greater improvement in French achievement, was accepted.

7. The hypothesis, that there would be a greater improvement in French achievement among girls than among boys was rejected.

(3) CONCLUSIONS

1. Older pre-school children are more able to learn the vocabulary and grasp an understanding of a second language than are younger pre-school children. However, with regard to pronunciation, younger pre-school children are as able as older ones. This is in general agreement with Penfield's position.

2. A crucial variable influencing second language achievement of pre-school children is the attitude of their parents towards the culture associated with the second language they are learning. Lambert found somewhat similar results in the older age group which he studied.

3. Pre-school children who come from homes where they are in contact with the second language by way of books, television programs and their parents speaking the language show more improvement in that language at school over a four month period than do children who come from homes which provide fewer of the above influences.

4. Mental age is a much poorer predictor of second language achievement of pre-school children than is chronological age.

(4) IMPLICATIONS FOR RESEARCH

1. In the course of this study it became increasingly clear that there was no theory of second language learning. Carroll (1963)

also found the same thing.

Psychologists for their part, have taken little interest in problems of foreign-language teaching, and basic learning theory has yet been developed to cover the case where alternative sets of semantic responses are learned. (p.99).

Thus, the formulation of a theory of second language learning could be a valuable contribution to the study of second languages. Postulates are needed for each variable believed to be significant in affecting language learning. Furthermore, to what extent do these variables interact with one another to produce certain results.

2. The conclusions of this study are based on a small sample, 33 subjects. Future research could test them using a larger sample in order to produce more stable statistical results.

3. The subject of compound and coordinate bilingualism is closely related to the age at which the second language is learned. It has not been discussed in this study but there is room for much further work in this area. Attempting to account for the different factors influencing the development of each of these forms of bilingualism may yield valuable findings.

4. Extensive research has been done on the effect of bilingualism on intelligence. As yet no absolute conclusion can be drawn, as to whether it hinders or improves intellectual performance. More research into this situation as it exists in the Canadian situation

would be of value.

(5) IMPLICATIONS FOR THE CLASSROOM

1. The second language curriculum in Alberta schools has the aim of getting students to achieve a reading and writing knowledge of a second language. In the home interviews conducted in this study it was found that most parents were interested in having their child speak French so that when he travels to a foreign country he will be able to communicate in more than one language. This kind of grasp of a second language could be taught in a kindergarten programme.

2. Within this sample a more favorable attitude towards the culture of the people associated with the second language being taught was one of the major factors involved in successful learning of that language. This being true, it may be desirable to attempt to form positive attitudes towards the culture of the people associated with the second language.

B I B L I O G R A P H Y

BIBLIOGRAPHY

- Adam, Georgia. Measurement and evaluation in education. New York: Holt, Rinehart and Winston, 1964.
- Andersson, T. Foreign languages in the elementary schools. Scholastic Teacher, 1959, 75, 15T.
- Birkmaier, E.M. Foreign languages. Rev. Educ. Res., 1958, 28, 127-139.
- Bishop, J.W. Observations on teaching elementary pupils Spanish. Mod. Lan. J., 1940, 25, 138-139.
- Blishen, B.R. The construction and use of an occupational class scale. Can. J. of Economics and Political Science, 1958 24, 519-531.
- Brooks, N. Language and language learning. (Sec. ed.), New York: Harcourt Brace and World, 1964.
- Carroll, J.B. The study of language. Cambridge Harvard University Press, 1963.
- Carroll, J.B. Language and thought. Foundations of modern psychology series, New Jersey: Prentice-Hall Inc., 1964.
- Ching, D.C. Methods for the bilingual child. El. Engl. 1965, 42, 22.
- Cox, D.M. Bilingualism, Canadian dialogue. Culture, 1964, 25, 46-52.
- Darcy, N.T. A review of the literature on the effects of bilingualism upon the measurement of intelligence. J. of Genet. Psychol., 1953, 82, 21-57.
- Davis, Kathleen, & Ward, J.H. Jr. PERSUB. 6570th Personnel Research Laboratory, Aerospace Medical Division, Air Force Systems Command, Lackland Air Force Base, Texas: 1963.
- Dunkel, H.B., & Pillet, R.A. The French program in the University of Chicago Elementary School. El. Sch. J., 1956. 57, 17-27.
- Dunkel, H.B., & Pillet, R.A. Second year of French in elementary school. El. Sch. J., 1957, 58, 143-151.

For bibliographical references see, Publications Manual of the American Psychological Association, 1957 Revision.

- Dunn, L.M. Peabody picture vocabulary test, manual. Nashville, Tennessee: American Guidance Service, 1959.
- Ellert, E.E., & Ellert, L.V. Teaching modern languages to the elementary school child. Educ. Res. Bull., 1953, 32, 1-6.
- Ferguson, G.A. Statistical analysis in psychology and education. Toronto: McGraw-Hill, 1959.
- Geigle, R.C. Foreign language and basic learnings. El. Sch. J., 1957, 57, 418.
- Girard, D.P., & Smith, H.F. Foreign language in the elementary school. Nat. Educ. Ass. J., 1955, 44, 270-271.
- Hildreth, G. Learning a second language. Mod. Lang. J., 1959, 43, 136-141.
- Hobbs, N. Child development and language learning. Sch. and Soc., 1953, 78, 17-21.
- Hoppock, A.S. Foreign language in the elementary school. Mod. Lang. J., 1957, 41, 269-271.
- Jakobovits, L., & Lambert, W.E. Semantic satiation among bilinguals. J. of Exp. Psychol., 1956, 43, 83-104.
- Jensen, J.V. Effects of childhood bilingualism. El. Engl., 1962, 39, 358-366.
- Johnson, G.B. Relationship existing between bilingualism and racial attitudes. J. Educ. Psychol., 1951, 42, 357-365.
- Jones, W.R. Attitude towards Welsh as a second language, a preliminary investigation. Br. J. Educ. Psychol. 1949, 19, 44-52.
- Jones, W.R. Bilingualism and intelligence. Cardiff: University of Wales Press, 1959.
- Jones, W.R. Bilingualism and non-verbal intelligence: a further study to test results. Br. J. Educ. Psychol. 1960, 30, 71-77.
- Kaulfers, W.V. Americans can be linguistic too. J. of the Nat. Educ. Ass., 1952, 41, 502-503.

- Kittell, J.E. Intelligence-test performance of children from bilingual environments. El. Sch. J., 1963, 64, 76-83.
- Kreusler, A. Bilingualism in Soviet non-Russian schools. El. Sch. J., 1961, 62, 94-99.
- Lambert, P. Should parents study languages too?. El. Sch. J., 1959, 60, 124-127.
- Lambert, W.E. Developmental aspects of second-language acquisition. J. Soc. Psychol. 1956, 43, 83-104.
- Lambert, W.E., Havelka, J., & Crosby, C. The influence of language acquisition contexts on bilinguals. J. of Abnorm. and Soc. Psychol., 1958, 56, 239-244.
- Lambert, W.E. & Fillenbaum, S. A pilot study of aphasia among bilinguals. Can. J. of Psychol., 1959, 13, 28-34.
- Lambert, W.E., & Gardiner, R.C. Motivational variables in second-language acquisition. Can. J. of Psychol., 1959, 13, 226-271.
- Lambert, W.E., Havelka, J. & Gardiner, R.C. Linguistic manifestations of bilingualism. Amer. J. of Psychol., 1959, 72, 77-82.
- Lambert, W.E., Gardiner, R.C. Olston, R., & Turnstall, K. Study of the roles of attitudes and motivation in second-language learning. U.S. Office of Education Study, 1960, Appendix A.
- Lambert, W.E., Hodgson, R.C., Gardiner, R.C., & Fillenbaum, S. Evaluational reactions to spoken languages. J. of Abnorm. and Soc. Psychol., 1960, 60, 44-51.
- Lambert, W.E., & Gardiner, R.C. A study of the roles of attitudes and motivation in second-language learning. U.S. Office of Education, 1961. (mimeographed).
- Lambert, W.E., Psychological approaches to the study of language. Part II: on second language learning and bilingualism. Mod. Lang. J., 1963, 47, 114-121.
- Lambert, W.E. & Lambert, W.W. Social psychology. Foundation of modern psychology series, New Jersey: Prentice-Hall, 1964
- Leopold, W.F. Speech development of a bilingual child. Chicago: Northwestern University, 1939.

- Lewis, G. Some future research in bilingualism. Times Educ. Suppl. 1957, 2191, 694.
- Lewis, D.G. Differences in attainment between primary-schools in mixed language areas: their dependence on intelligence and linguistic background. Br. J. Educ. Psychol., 1960, 30, 63-70.
- Lore, H.D. Bilingualism in Southwest Louisiana. J. Educ. Res., 1962, 56, 144-147.
- Lundberg, G.A., Schrag, C.C., & Larsen, O.N. Sociology. (3rd.ed.), New York, Harper and Row, 1963.
- Miel, Alice. Does foreign language belong in the elementary school?. Teachers' College Record, 1954, 56, 139-148.
- Moreno, J.L. Who shall survive. (Rev.ed.), 1953. Cited by Klineberg, O. Social psychology. (Rev.ed.), New York: Henry Holt, 1954.
- Morrison, J.R. Native and ancestral speech. Times Educ. Suppl., 1957, 2208, 1199.
- Murra, E. Learning English as a second language. J. Educ. Sociology, 1954, 28, 181-192.
- Olson, D.R. The influence of foreign language background on performance on selected intelligence tests. Unpublished masters dissertation, University of Alberta, 1962.
- Osgood, C.E. Second language learning and bilingualisms. J. of Abnorm. and Soc. Psychol., 1954, 49, 139-141.
- Peal, E., & Lambert, W.E. The relation of bilingualism to intelligence. Psychol. Monogr., Gen and Appl., 1962, #546.
- Penfield, W., & Roberts, L. Speech and brain mechanism. Princeton, N.J.: Princeton University Press, 1959.
- Persky, Ruth. Some thoughts on teaching Spanish to elementary age children. Mod. Lang. J., 1954, 38, 369-371.
- Riesta, M.A., & Johnson, C.E. Changes in attitudes of elementary school pupils toward foreign-speaking peoples resulting from the study of a foreign language. J. of Exp. Educ., 1964, 33, 65-72.

- Semple, S.W. The problem of bilingualism in the schools of Wales and Scotland. Toronto Research Series #35, The Department of Education Research, Ontario College of Education, University of Toronto. 1964.
- Siegel, S. Nonparametric statistics for the behavioral sciences. Toronto: McGraw-Hill, 1956.
- Singer, H. Bilingualism and elementary education. Mod. Lang. J., 1956, 40, 444-458.
- Smith, M.E. Measurement of the vocabulary of young bilingual children in both of the languages used. Pedag. Seminary, 1949, 74, 305-310.
- Soffietti, J.P. Bilingualism and biculturalism. J. Educ. Psychol., 1955, 46, 222-227.
- Tabouret-Keller, A. Problemes psychopedagogiques du bilinguisme. Internat. Rev. Educ., 1960, 6, 52-54.
- Tan, G.L. Bilingual education and its inherent problems with reference to Burma. Doctoral dissertation, University of California, Berkeley, California, 1947. Cited by Singer, H. Bilingualism and elementary education. Mod. Lang. J., 1956, 40, 444-458.
- Terman, L.M., & Merrill, M.A. Stanford-Binet intelligence Scale, manual for the third revision, form L-M. Boston: Houghton Mifflin, 1960.
- Tireman, L.S., & Zintz, M.V. Factors influencing learning a second language. Educ., 1961, 81, 310-313.
- Travers, R.M. An introduction to educational research. New York: MacMillan, 1958.
- Tyler, R.W. Need for more comprehensive formulation of theory of learning a second language. Mod. Lang. J., 1948, 32, 559-567.
- Villegas, V.V. Foreign languages from the first grade. Amer. Sch. Bd. J., 1958, 41, 136.
- Wiens, G. Russo-German bilingualism, a case study. Mod. Lang. J., 1952, 36, 392-395.

Williams, J.L. Bilingual Wales: lessons for the language teacher. Times Educ. Suppl., 1963, 299.

Wimer, C., & Lambert, W.E. The differential effects of word and object stimuli on the learning of paired associates. J. of Exp. Psychol., 1959, 57, 31-36.

APPENDICES

APPENDIX A

FRENCH TRANSLATION OF THE PEABODY PICTURE VOCABULARY TEST

FRENCH TRANSLATION OF THE PEABODY PICTURE VOCABULARY TEST

Ou est...?	1.	l'automobile
	2.	la vache
	3.	le bebe
	4.	la fille
	5.	la balle
	6.	le block
	7.	le bouffon
	8.	la clef
	9.	la boite
	10.	la poule
	11.	souffler
	12.	l'eventail
	13.	creuser
	14.	la jupe
	15.	attraper
	16.	le tambour
	17.	la feuille
	18.	attacher
	19.	la cloture
	20.	le baton
	21.	l'abeille
	22.	le buisson
	23.	verser
	24.	coudre
	25.	le chien chaud
	26.	la maitresse
	27.	construire
	28.	la plume
	29.	le rat
	30.	la montre
	31.	le canard
	32.	le bicycle
	33.	la scie
	34.	bucher
	35.	l'hamecon
	36.	la hache
	37.	la pie
	38.	le soldat
	39.	le carrosse
	40.	la selle
	41.	la chaudiere
	42.	le prisoner
	43.	la baleine
	44.	le cadeau
	45.	ecriver

APPENDIX B

ATTITUDE SCALE

DIRECTIONS

This inventory is designed to sample opinions about French Canadian-English Canadian relations. There is considerable disagreement as to what these relations should be; therefore, there are no right or wrong answers. Read each statement and decide how YOU feel about it. Then underline the statement which best expresses your feelings.

Name: _____

Underline that alternative which best expresses your attitude towards each statement.

1. French should be a compulsory subject from grade I to grade XII.
 Strongly agree Agree Undecided Disagree Strongly disagree
2. The Canadian law which allows a member of parliament to address the House of Commons in either French or English should be changed so that English would be the only language that could be used.
 Strongly agree Agree Undecided Disagree Strongly disagree
3. Parents who know how to speak French should teach their children to speak French.
 Strongly agree Agree Undecided Disagree Strongly disagree
4. Any Canadian who cannot speak French is not truly a Canadian.
 Strongly agree Agree Undecided Disagree Strongly disagree
5. Too much attention has been given to bilingualism and biculturalism in Canada.
 Strongly agree Agree Undecided Disagree Strongly disagree
6. French is a useful language in today's world.
 Strongly agree Agree Undecided Disagree Strongly disagree
7. Employers in Western Canada exhibit a preference for workers who can use both French and English.
 Strongly agree Agree Undecided Disagree Strongly disagree
8. Learning a second language, such as French is generally boring, difficult and a waste of time.
 Strongly agree Agree Undecided Disagree Strongly disagree
9. The ability to speak French as well as the official language of your country is the mark of a cultured person.
 Strongly agree Agree Undecided Disagree Strongly disagree
10. I would prefer to live in a community which is predominantly French Canadian.
 Strongly agree Agree Undecided Disagree Strongly disagree
11. French Canadians are trying to force other Canadians to learn French.
 Strongly agree Agree Undecided Disagree Strongly disagree
12. French is too difficult for children in elementary school to learn.
 Strongly agree Agree Undecided Disagree Strongly disagree
13. Special arrangements should be made in our city so that persons wanting their children to learn French in elementary school would have the opportunity to do so.
 Strongly agree Agree Undecided Disagree Strongly disagree

4. Children who learn French at home generally do poorer than English speaking children when they attend school in our city.
 Strongly agree Agree Undecided Disagree Strongly disagree
5. If parents want French taught to their children then they should send them to a private school.
 Strongly agree Agree Undecided Disagree Strongly disagree
16. A person who has learned French at school is at a disadvantage once he enters a job.
 Strongly agree Agree Undecided Disagree Strongly disagree
17. Some customs of the French Canadians are very worthwhile and should be adopted by other Canadians.
 Strongly agree Agree Undecided Disagree Strongly disagree
18. If the British had been clever they would NOT have given the French any rights when they conquered them. Thus, we would have no problem with them today
 Strongly agree Agree Undecided Disagree Strongly disagree
19. French Canadians should be proud of their ancestry.
 Strongly agree Agree Undecided Disagree Strongly disagree
20. When possible children should be taught to speak French in early childhood.
 Strongly agree Agree Undecided Disagree Strongly disagree
21. Most French Canadians are rather uneducated and ignorant.
 Strongly agree Agree Undecided Disagree Strongly disagree
22. French Canadians feel that they are superior to English Canadians.
 Strongly agree Agree Undecided Disagree Strongly disagree
23. Most French Canadians are not too ambitious.
 Strongly agree Agree Undecided Disagree Strongly disagree
24. French Canadians feel that they deserve special treatment.
 Strongly agree Agree Undecided Disagree Strongly disagree
25. All federal government civil servants should be able to speak French.
 Strongly agree Agree Undecided Disagree Strongly disagree
26. A person who can speak French as well as English is a better educated person, than a person who speaks only English.
 Strongly agree Agree Undecided Disagree Strongly disagree
27. Canada should forget its French background and become an English speaking country
 Strongly agree Agree Undecided Disagree Strongly disagree
28. French Canadians should be more concerned about learning to speak English correctly rather than getting English speaking persons to speak French.
 Strongly agree Agree Undecided Disagree Strongly disagree

29. It would be desirable if all Canadians could speak French.
Strongly agree Agree Undecided Disagree Strongly disagree
30. French should NOT have equal status with English in Canada since only 33% of all
Canadians are of French descent.
Strongly agree Agree Undecided Disagree Strongly disagree
31. I like French Canadians.
Strongly agree Agree Undecided Disagree Strongly disagree

B. KOLMOGORO-SMIRNOV TEST OF INITIAL ATTITUDE SCALE ITEMS

Item Number	Chi Square	Item Number	Chi Square
1	20.58**	19	1.06 omitted
2	25.38**	20	8.32*
3	31.50**	21	21.68**
4	16.11**	22	26.52**
5	22.45**	23	21.96**
6	6.64*	24	14.99**
7	28.64**	25	11.46**
8	9.71**	26	6.42*
9	11.01**	27	9.34**
10	0.22 omitted	28	23.60**
11	17.83**	29	14.07**
12	14.99**	30	44.74**
13	21.96**	31	2.58 omitted
14	15.22**	32	14.30**
15	7.20*	33	20.58**
16	4.10 omitted	34	10.13**
17	10.23**	35	0.35 omitted
18	14.99**	36	21.19**

*Significant at the .05 level.

**Significant at the .01 level.

C. CHI SQUARE AND SCORING VALUES FOR ATTITUDE SCALE ITEMS SELECTED

Item Number	Chi Square	S.A.	Scoring Values			
			A.	U.	D.	S.D.
1	23.37**	2	1	0	0	0
2	30.73**	0	0	0	1	2
3	29.30**	2	0	0	0	0
4	22.78**	2	2	1	1	0
5	28.33**	0	0	0	1	2
6	15.47**	2	1	0	0	0
7	30.52**	2	2	1	0	0
8	10.05**	0	0	0	0	2
9	15.09**	2	1	0	0	0
11	18.82**	2	2	2	1	0
12	15.35**	0	0	0	2	2
13	21.96**	0	0	0	0	2
14	15.35**	2	0	0	0	0
15	7.23*	0	0	0	2	2
17	9.65**	0	0	0	1	2
18	15.35**	0	0	0	0	2
20	10.05**	2	2	0	0	0
21	20.64**	0	0	0	1	2
22	26.62**	2	0	0	0	0
23	37.98**	2	1	0	0	0
24	15.91**	0	0	0	1	2
25	13.20**	0	0	0	0	2
26	8.12*	0	0	0	1	2
27	10.85**	0	0	1	2	2
28	24.16**	2	2	0	0	0
29	10.05**	2	2	0	0	0
30	47.04**	0	0	0	1	2
32	16.80**	0	0	1	2	2
33	24.08**	2	2	1	0	0
34	17.87**	0	0	0	1	2
36	32.99**	2	1	0	0	0

*Significant at the .05 level.

**Significant at the .01 level.

D. EXAMPLES OF SCORING TECHNIQUE USED FOR ATTITUDE SCALE

Item Number 1	S.A.	A.	U.	D.	S.D.
French Speaking	14	18	1	2	0
English Speaking	3	8	2	13	5
Score	2	1	0	0	0
Item Number 28	S.A.	A.	U.	D.	S.D.
French Speaking	13	17	3	2	0
English Speaking	4	4	4	13	6
Score	2	2	0	0	0

APPENDIX C

FRENCH INFLUENCE IN THE HOME INVENTORY

A. FRENCH INFLUENCE IN THE HOME INVENTORY

I. OUTLINE OF THE HOME INTERVIEW

1. Occupation of husband (specific)
2. French level of the home:
 - A. Mother's fluency in French.
 - B. Amount of French used in the home.
 - C. French magazines in the home.
 - D. French radio programs listened to.
 - E. French T.V. programs children watch.
 - F. French story books in the home.
 - G. French or English church attended.

II. Rating Scale

1. Occupation of husband:
 - A. Ranked according to the Blishen index to get a measure of socio-economic status.
 - B. French level of the home:
 - A. Mother's ability to use French:
 - a. Nil-0
 - b. Understand-2
 - c. Fluent-4
 - B. Amount of French spoken to children:
 - a. Nil-0
 - b. Occasionally-2
 - c. Always-4

- C. French magazines (one or more) - 1
- D. French radio (listen at all) - 1
- E. French T.V. (Chez Helene) - 1
- F. French books (one or more) - 1
- G. French church attended - 1

Weighted scores gathered on the basis of the above rating scale.

APPENDIX D

HOME INTERVIEW

A. STRUCTURED HOME INTERVIEW (PART I)

Read each statement carefully and indicate the extent to which it is descriptive of your reasons for having your child study French.

I. Integrative orientation:

1. It will help him to understand better the French people and their way of life.

[illegible]

2. It will enable him to gain good friends more easily among French speaking people.

[illegible]

3. It should enable him to begin to think and behave as the French do.

not my feeling definitely
at all : : : : : : :my feeling

4. It will allow him to meet and converse with more and varied people.

not my feeling definitely
at all : : : : : :my feeling

II. Instrumental orientation:

1. I think it will some day be useful in getting a good job

not my feeling definitely
at all : : : : :my feeling

2. One needs a good knowledge of at least one foreign language to merit social recognition.

[illegible]

3. I feel that no one is really educated unless he is fluent in the French language.

[illegible]

4. It will be of value in finishing high school.

[illegible]

III. Rating of Mother's French Skills: Check the following statement which best applies to you.

I speak French: not at all _____ a little _____ fairly well _____ fluently _____

I read French: not at all a little fairly well fluently

I write French: not at all a little fairly well fluently

IV. Rating of Father's French Skills: Rate your husband's French skills in the same way as above.

He speaks French: not at all a little fairly well fluently

He reads French: not at all a little fairly well fluently

He writes French: not at all a little fairly well fluently

V. Rating of Child's French Skill : Rate your child's French skill in the same way as above.

He speaks French: not at all a little fairly well fluently

VI. Reinforcements for Speaking European French:

1. If your child spoke French at home the way the European French speak it, or as his teachers speak it, what would be the reactions of:

a. His parents _____

b. His brothers and sisters

c. His close French-Canadian friends

VII. Desire for French Identity:

1. Do you think there should be a French T.V. channel in your district?

Definitely			Don't see the need for
yes	:	:	:one

2. Are most of your close friends French or English-speaking?

Mostly French : : : Mostly English

3. Would you prefer to have neighbours who are French or English speaking?

- a. Prefer French-speaking Canadians_____

- b. Indifferent _____

- c. Prefer English-speaking Canadians

4. Do you want your children to grow up speaking French?

Yes _____ No _____

VIII. French Acquaintances:

Do you know any French-speaking people? About how many

Are any of these really good friends?

How friendly are you with them? _____

B. HOME INTERVIEW RATING SCALE (PART I)

1. Responses in sections I and II were assigned ordinal numbers from one to seven, and increasing from left to right.
2. Responses to items in sections III, IV and V were assigned ordinal numbers from one to four, increasing from left to right.
3. Responses to items in section VI were grouped and assigned ordinal numbers on the following basis:
 - a. In favour of European French - 6
 - b. Indifferent - 3
 - c. In favour of Canadian French - 0
4. Responses in section VII were assigned ordinal numbers from one to three, for items one to three.
 - a. In items one and two the ordinal numbers increased in size from left to right.
 - b. Ordinal numbers in item three increased from top to bottom.
 - c. Item four was assigned a score of two for a response of yes and a score of one for a response of no.
5. Responses in section VIII were assigned ordinal numbers on the following basis:
 - a. A few French-speaking friends - 1
 - b. Most friends French-speaking - 2
 - c. Casual French-speaking friends - 1
 - d. Good French-speaking friends - 2

C. UNSTRUCTURED HOME INTERVIEW (PART 2)

ITEMS REGARDING THE CHILD

1. What do you feel is your child's attitude towards attending kindergarten?
2. What do you believe your child's attitude is towards learning French?
3. How have you responded to your child's learning of French?
4. Has your child progressed well in kindergarten?

ITEMS REGARDING THE PARENT

1. Discuss what influenced you to send your child to a French kindergarten?
2. Since your child has been in kindergarten, has your attitude towards teaching young children another language been altered?
3. Do you plan to have your child continue to take French?
4. French kindergartens appear very popular, Why?
5. Are our school systems adequately providing for the instruction of students in a second language?
6. Does your husband agree with your notions on the child's learning of a second language?
7. Is knowledge of both French and English becoming the mark of a cultured person in Canadian society?
8. Discuss the Royal Commission on Bilingualism and Biculturalism, and its implications.
 - a. New flag.
 - b. Bilingual civil service.
 - c. French in school (grade one and up?)

d. Minority groups and their language rights in the public school systems.

e. Do you want to see Canada as an ethnic melting pot?

9. Separatist Issue:

a. Have they a just grievance?

b. Will Quebec secede from the union?

c. Quebec is in favour of teacher exchange with France.

Do we want more of France? Alternative to this?

10. Confirm socio-economic status.

D. HOME INTERVIEW RATING SCALE (PART 2)

1. Nationalistic Scale: High score corresponds to a high degree of nationalism.

8a. No - 1 point

Yes - 2 points

f. No - 1 point

Yes, but maintain ethnic background - 2 points

Yes, under all circumstances - 3 points

9b. Yes, - 1 point

I hope not - 2 points

No - 3 points

2. Prejudice Scale" High score corresponds to a high degree of prejudice in favour of French.

8b. No - 1 point

Yes, but not in all areas - 2 points

Yes - 3 points

d. Yes, definitely - 1 point

Have rights where they are in a majority - 2 points

No, definitely - 3 points

9b. No - 1 point

Perhaps - 2 points

Yes - 3 points

c. No good - 1 point

Indifferent - 2 points

Good - 3 points

Other items on the scale were grouped and a clinical rating was given on the basis of the degree to which the home exhibited a favourable attitude towards the French culture. Homes were assigned ordinal ratings from one to four, the higher number representing the more favourable attitude.

APPENDIX E

RAW DATA

Student	M.A. in Months	C.A. in Months	Sex	S-Binet Vocabu- lary	Blishen Index
1	67	64	M	6	82.5
2	72	65	M	7	57.7
3	65	67	F	8	50.2
4	57	56	F	3	50.2
5	59	52	F	4	45.6
6	57	39	F	4	57.7
7	78	71	F	7	75.0
8	46	50	F	0	78.0
9	82	62	M	8	78.0
10	65	56	F	5	82.5
11	67	61	F	9	67.7
12	43	57	F	0	43.2
13	68	68	M	4	43.2
14	62	54	F	2	75.2
15	66	66	F	7	54.2
16	40	47	F	0	56.7
17	62	60	F	4	48.2
18	92	67	M	8	78.8
19	59	58	M	6	82.5
20	86	69	M	8	82.5
21	68	61	M	5	45.4
22	67	68	F	2	56.0
23	67	68	F	4	56.7
24	75	62	F	7	50.4
25	72	62	F	6	62.2
26	73	59	M	6	67.7
27	60	66	M	2	78.8
28	63	63	F	1	49.8
29	69	66	F	5	70.0
30	49	51	F	2	82.5
31	83	67	F	6	58.2
32	76	61	M	7	57.0
33	59	50	F	5	58.2

Home Level of French	French Attitude Scale	Integrative Orientation	Instrumental Orientation	Degree of Nationalism
11	41	14	15	7
05	32	19	14	6
01	19	13	15	5
01	19	13	15	5
06	21	17	13	7
01	30	21	16	7
01	53	24	10	8
08	37	18	16	6
08	37	18	16	6
01	15	22	15	7
03	39	16	09	5
11	40	22	14	6
11	39	21	13	6
01	31	20	13	7
07	49	26	22	7
01	27	25	13	6
07	55	25	22	7
01	30	19	14	8
01	50	20	14	6
01	50	20	14	6
06	31	25	11	8
11	25	22	16	8
09	49	10	10	7
02	40	22	10	4
01	23	19	10	7
02	15	24	10	6
01	33	26	05	6
12	35	16	04	7
07	24	25	18	7
05	40	22	22	4
05	19	22	16	7
06	41	28	14	7
01	41	21	16	6

Degree of Prejudice	Peabody Vocabulary	Aural Skills	Oral Skills	Mother's Rating of Child's French
10	13	4	3	1
09	16	5	3	2
08	22	2	2	1
08	04	1	2	1
11	10	4	4	2
11	14	4	5	3
07	22	6	5	2
10	00	4	4	1
10	17	2	3	2
09	06	3	3	1
11	13	3	2	2
08	06	7	4	3
08	22	7	7	3
06	12	3	2	1
08	25	6	6	4
09	06	1	1	1
08	25	4	3	3
09	18	3	2	2
11	05	2	2	1
11	21	5	4	1
08	21	2	2	1
09	23	7	7	3
07	21	6	5	3
06	19	5	5	2
09	06	6	5	2
08	00	3	3	2
07	09	4	3	2
09	22	7	7	3
08	18	4	4	2
11	03	3	5	3
06	16	6	5	2
10	22	3	2	2
11	06	2	2	1

Mother's Self Rating of French	Mother's Rating of Father's French	Favoritism for European French	Desire for French Identity
9	9	3	08
0	9	6	08
1	6	0	10
1	6	0	10
9	9	6	09
0	0	6	08
3	0	6	08
1	5	3	08
1	5	3	08
0	8	0	09
5	9	6	09
7	9	0	10
9	9	0	08
4	7	3	08
0	9	3	10
0	1	3	07
8	9	6	11
1	1	6	07
2	0	3	08
2	0	3	08
9	8	3	07
9	6	6	11
9	9	0	10
0	0	0	06
9	1	6	08
0	0	3	09
2	6	6	09
9	9	0	09
6	9	6	06
9	9	6	08
5	0	6	06
6	6	0	08
1	1	6	08

French Acquaintances	I.Q.	Clinical Rating of Attitude Towards French
2	106	4
3	112	3
3	097	1
3	101	1
0	113	2
0	139	2
4	111	2
3	092	2
3	134	2
1	116	2
4	110	3
4	073	3
4	100	4
2	115	2
4	131	4
0	085	2
4	103	3
2	137	2
2	101	2
2	128	2
2	112	2
4	099	4
4	097	3
4	123	4
4	117	4
0	125	1
2	090	2
4	100	4
2	105	2
0	095	3
2	127	2
4	127	3
2	117	2

APPENDIX F

CORRELATION MATRIX

LIST OF ITEMS IN CORRELATION MATRIX

1. Mental age
2. Chronological age
3. Sex (male)
4. Stanford-Binet vocabulary
5. Blishen Index
6. Home level of French
7. Parental attitude towards French culture scale
8. Integrative orientation
9. Instrumental orientation
10. Degree of nationalism
11. Degree of prejudice
12. A French translation of the Peabody Picture Vocabulary Test
13. A measure of aural skills
14. A measure of oral skills
15. Mother's rating of child's French
16. Mother's self rating of French
17. Mother's rating of father's French
18. Favoritism for European French
19. Desire for French identity
20. French acquaintances
21. I.Q.
22. Clinical rating of parental attitude towards French culture.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.
1.	1.000	.676**	.438**	.784**	.198	-.117	.022	.005	-.133	.308*	-.175	.529**	.171	.089	-.000	-.069	-.291	.121	-.289	.233	.719**	.129
2.		1.000	.315*	.467**	.025	.243	.187	-.052	-.211	.232	-.430**	.622**	.463**	.282	.172	.214	.121	-.076	.062	.582**	.052	.342
3.			1.000	.364**	.289	.023	.129	.139	-.187	.084	.166	.081	-.169	-.264	-.205	-.082	-.092	-.052	-.218	-.092	.246	-.070
4.				1.000	.184	-.312*	.111	-.071	.034	-.000	.099	.381*	-.125	-.185	-.118	-.256	-.245	.118	-.208	.162	.682**	-.002
5.					1.000	-.323*	.110	.001	.050	-.016	.269	-.333*	-.266	-.234	-.368*	-.277	-.241	.271	-.258	-.322*	.172	-.292*
6.						1.000	.216	-.118	.108	.216	-.009	.332*	.546**	.530**	.508**	.636**	.630**	-.220	.251	.400*	-.319*	.587**
7.							1.000	.090	.127	-.015	.128	.359*	.233	.135	.276	.133	.060	-.011	.109	.436**	-.061	.324*
8.								1.000	.190	.205	-.147	.078	.025	.002	.178	-.120	-.177	.254	-.244	-.131	.136	.030
9.									1.000	-.045	.218	.040	-.160	-.014	.161	-.066	.148	.203	.099	-.147	.126	-.075
10.										1.000	-.125	.385*	.288	.151	.122	.285	.014	.250	.035	.072	.244	.173
11.											1.000	-.277	-.294*	-.155	-.122	.010	-.017	.237	.052	-.319*	.112	-.121
12.												1.000	.405**	.348*	.400*	.245	.205	-.073	.083	.530**	.267	.431**
13.													1.000	.859**	.656**	.430**	.158	-.006	.163	.513**	-.089	.719**
14.														1.000	.709**	.397*	.126	-.011	.131	.327*	-.006	.615**
15.															1.000	.340*	.316*	.095	.352*	.327*	.019	.532**
16.																1.000	.512**	.043	.169	.246	-.339*	.479**
17.																	1.000	-.194	.428**	.243	-.416**	.261
18.																		1.000	-.172	-.284	.214*	-.069
19.																			1.000	.305*	-.336*	.049
20.																				1.000	-.135	.592**
21.																					1.000	-.013
22.																						1.000

*Significant at the .05 level. (.291)

**Significant at the .01 level. (.405)

B29834